



Vienna, Nationalbibliothek, MS Cpv. 51, fol. 35v, figure showing Guido with monochord and Bishop Theodaldus, to whom the *Micrologus* is dedicated (12th century).

## INTRODUCTION

by Claude V. Palisca

Guido's reputation as a theorist and pedagogue has rested as much on legend as on the works he left behind. John, in the treatise translated in this volume, credited him with introducing neumatic notation.<sup>1</sup> Sigebert de Gembloux around 1105–10 hailed him as inventor of the "Guidonian" hand,<sup>2</sup> and by tradition he is thought responsible for the system of hexachords and mutations.<sup>3</sup> Yet none of these innovations can be securely attributed to him, although he surely laid the ground for the hand and the hexachord system. During several centuries after his death his accomplishments were progressively inflated, such was the reverence for his name. Only by returning to those writings that can be established as his can we know his thought and appreciate its impact.

His surviving writings, all of uncertain date, are four: *Micrologus*; a prologue to an antiphoner, which begins "Temporibus nostris" and is often referred to as *Aliae regulae*;<sup>4</sup> a verse-introduction to the same antiphoner,<sup>5</sup> known as *Regulae rhythmicae*; and *Epistola de ignoto cantu*, a letter to his friend, Brother Michael.<sup>6</sup> Of these, *Aliae regulae* has been available in a translation published by Oliver Strunk;<sup>7</sup> *Epistola de ignoto cantu* is also there but with a lengthy omission.<sup>8</sup> *Regulae rhythmicae* has not been translated into English. The present English version of *Micrologus* is the first to be published.<sup>9</sup>

*Micrologus* is Guido's most important and wide-ranging work. But it does not contain the two brilliant proposals that launched the Guido legend, the device of staff notation, described in the Prologue, and the application in the

1. Chap. 21, p. 148.

2. *De viris illustribus*, in Jacques Paul Migne, *Patrologia cursus completus: Series latina*, 160: 204, under year 1028. For the early history of the hand see Joseph Smits van Waesberghe, *Musikerziehung, Lehre und Theorie der Musik im Mittelalter*, Musikgeschichte in Bildern vol. 3, fasc. 3 (Leipzig, 1969), pp. 120ff.

3. The exposition of the hexachord system in Engelbert of Admont, *De musica*, tractatus 3, cap. 6–8, GS 2: 323a–28b, is believed to be the first.

4. GS 2: 34–37a.

5. GS 2: 25–33.

6. GS 2: 43–50.

7. *Source Readings in Music History* (New York, 1950), pp. 117–20.

8. *Ibid.*, pp. 121–25. The passage omitted is GS 2: 46a/10 to 50b/11.

9. There are two German translations: Raymund Schlecht, *Micrologus Guidonis de disciplina artis musicae*, in *Monatshefte für Musikwissenschaft* 5 (1873): 135–65, 167–77; and Michael Hermesdorff, *Micrologus Guidonis de disciplina artis musicae, d. i. Kurze Abhandlung Guidos über die Regeln der musikalischen Kunst* (Trier, 1876).

*Epistola* of the syllables *ut-re-mi-fa-sol-la* in the hymn *Ut queant laxis* as an aid to sight-singing. Whereas *Micrologus* was addressed to boys learning the elements of music, the other two prose works seem to have been directed at seasoned singers ultimately to improve the state of musical practice at the highest level.

Although what can be said about the chronology of his writings is not conclusive, the reader of *Micrologus* will want to consider the relationship of this treatise to his others, and that in the context of the few facts known of the author's life.

Guido's own words are the best witness to the events of his life.<sup>10</sup> In the dedicatory letter to *Micrologus* addressed to Bishop Theodaldus of Arezzo, who held that post from 1023 to 1036, Guido praises the bishop for his plan of the cathedral church of St. Donatus, which from a contemporary document is known to have been commissioned of the architect Adalbertus Maginardo in 1026 and finished in 1032.<sup>11</sup> Since he refers to a plan rather than a finished cathedral, it is possible that *Micrologus* was completed around this time. The explicit of a manuscript no longer extant states that the treatise was completed in the author's thirty-fourth year during the pontificate of John XX (*recte* XIX), who reigned between 1024 and 1033.<sup>12</sup>

From the letter to Brother Michael we learn that the addressee and Guido had been at the Benedictine monastery of Pomposa under Abbot Guido,<sup>13</sup> and a reference there to "our Antiphoner" suggests that Michael and Guido had collaborated in this project "by means of which boys could learn chants that they had never heard."<sup>14</sup> These remarks imply that the Antiphoner employed a new and precise pitch notation. If this was the antiphoner that the extant Prologue introduced, it must have used the notational system described there: neumes on staff lines identified as to pitch by the color yellow for C and red for F and also by the letter name of the pitch placed at the beginning of these lines.<sup>15</sup>

In the letter we also learn that Guido was driven away from Pomposa by the envy of his brothers after he had devised a method that permitted learning new chants easily. Word of his success and that of the new Antiphoner reached Pope John, who invited him to Rome. Since John XIX died in January 1033, and Guido wrote of becoming ill from the summer heat during his

10. The two best sources for his biography were written independently and contemporaneously and, therefore, disagree on many points: J. Smits van Waesberghe, *De musico-paedagogico et theoretico Guidone Aretino* (Florence, 1953), and H. Oesch, *Guido von Arezzo* (Bern, 1954). Oesch added an appendix in which he reconciled his own views with those of van Waesberghe, pp. 118-23.

11. See van Waesberghe, *De musico-paedagogico*, p. 13, and bibliography cited there.

12. Quoted *ibid.*, p. 30.

13. "Guido of Pomposa" in *New Catholic Encyclopedia* (New York, 1967) 6: 842-43. According to *Biblioteca sanctorum* (Rome, 1966) 6: 510-12, Guido was elected Abbot in 998. He died in 1046.

14. GS 2: 44a.

15. See van Waesberghe, "The Musical Notation of Guido of Arezzo," *Musica disciplina* 5 (1951): 15-53.

sojourn,<sup>16</sup> the visit must have occurred no later than the summer of 1032. The Antiphoner, therefore, must have been at least begun in Pomposa, though it was probably not finished there, because in his letter Guido speaks of showing it to Abbot Guido of Pomposa only after his trip to Rome.<sup>17</sup> Impressed with our Guido's achievement, the Abbot invited him to return to Pomposa and advised him to avoid the cities, where most bishops were accused of simony. It is believed that Guido eventually did settle in a Camaldulensian monastery near Arezzo. An earlier period of residence in Arezzo must have preceded the journey to Rome, since he was accompanied, according to his letter, by an Abbot Grunwald and Dom Peter, Provost of the Canons of the church of Arezzo.<sup>18</sup> At the end of the letter Guido mentions the prologues "both in prose and verse," to the Antiphoner and "our little book called *Micrologus*."<sup>19</sup>

From these facts and inferences and from internal evidence in the treatises an approximate chronology of Guido's works can be hypothesized. In *Micrologus* Guido twice mentions "our notation,"<sup>20</sup> but he never refers to a completed antiphoner, nor does he describe a new notation. The examples in manuscripts of *Micrologus* are given in letter notation, sometimes heightened, without neumes. Even in the twelfth-century manuscript from St. Evreux, in which the Guidonian staff notation is used for a tropier and for the *Epistola*, the examples for *Micrologus* are in letters.<sup>21</sup> The weight attached in *Micrologus* to learning new chants with the help of the monochord (chap. 1), a method belittled as "childish" in the *Epistola*,<sup>22</sup> suggests that a period of development leading to the final form of both the staff notation and the Antiphoner, as well as the solmization device, occurred between *Micrologus* and the *Epistola*.<sup>23</sup>

As for the dates when these works were written and when the events of his life took place, they can be circumscribed within a decade. Since Theodaldus became bishop in 1023 and it was he who drew Guido to Arezzo, Guido's relocation there must have been after this date. Mention of the Cathedral of St. Donatus in *Micrologus* puts the completion of the treatise after 1026. The trip to Rome must have occurred near the end of Pope John's reign, or approximately in 1032. Thus the most likely date for *Micrologus* is 1026–28.<sup>24</sup> The Antiphoner and the prose and verse prologues to it must have been completed around 1030, and the *Epistola* around 1032.

16. GS 2: 44a.

17. Ibid.

18. Ibid.

19. Ibid., 50b.

20. In the Prologue and in chap. 1.

21. Paris, Bibliothèque nationale, MS lat. 10508, fols. 135r–43r.

22. GS 2: 44b.

23. Van Waesberghe in *De musico-paedagogico*, pp. 22–23, put forward a similar chronology. Oesch, *Guido*, p. 79, was of the opinion that the *Aliae regulae* was written in Pomposa before *Micrologus*.

24. Van Waesberghe dates it 1028–32 in *De musico-paedagogico*, p. 37. Oesch dates it 1025–26 in *Guido*, pp. 79, 119.



In all his writings Guido named only two authors or sources: Boethius<sup>25</sup> and "the book *Enchiridion*, which the most reverend Abbot Odo wrote most lucidly."<sup>26</sup> Until recently it has been thought that this *Enchiridion* was the *Dialogus* often attributed as early as the twelfth century to an Abbot Odo.<sup>27</sup> Recently Michel Huglo has argued that Guido was here referring to the *Musica enchiriadis* by its proper title and attributing it to an Odo, as it is in a number of early manuscripts, thinking perhaps it was the Odo who left a well-known tonary from the vicinity of Arezzo.<sup>28</sup> An Italian manuscript of the *Enchiriadis*, Florence, Biblioteca Medicea-Laurenziana, MS Ashburnham 1051, indeed bears an attribution to an Abbot Odo.<sup>29</sup> Early ascriptions of the *Dialogus* to an Odo, on the other hand, are all from southern Germany,<sup>30</sup> so it is not likely that Guido would have come across this attribution. Moreover, Huglo has shown that the *Dialogus* is not by anyone named Odo, particularly not Abbot Odo of Cluny, but by an anonymous author from near Milan.<sup>31</sup> The most persuasive argument for believing that Guido meant *Musica enchiriadis*, as Huglo has pointed out, is that Guido explicitly joined to his recommendation of Odo's *Enchiridion* the comment, "I did not follow his example in the signs for the notes,"<sup>32</sup> that is the daseian diastematic notation. Guido did, on the other hand, follow the example of the author of the *Dialogus* in using an alphabetical notation.

Nevertheless, of the two authors, it was to the Pseudo-Odo of the *Dialogus* that Guido owed the most.<sup>33</sup> It was from him that he derived the method of teaching singers unfamiliar music by means of the monochord (Pseudo-Odo, chap. 1; Guido, chap. 1) and the two-octave A— $\frac{a}{b}$  gamut extended down one note to gamma (Pseudo-Odo, chap. 2; Guido, chap. 2); to these Guido added the notes  $\frac{b}{c}$  to  $\frac{d}{e}$ . The letters were applied by Pseudo-Odo to the texts of chants in musical examples as a kind of letter notation. This practice too was followed by Guido, though some manuscripts show a staff notation, which must be a later addition.

The first of the two monochord divisions presented by Guido (chap. 3) is also based on Pseudo-Odo (chap. 2); only the order of divisions was altered by our author, who derived b-flat with the quaternary divisions, while the

25. *Epistola*, GS 2: 50b, where Guido says he did not follow him because "his book is not useful to singers, only to philosophers," and *Micrologus*, chap. 20.

26. *Epistola*, GS 2: 50b.

27. GS 1: 251–64, translated in Strunk, *Source Readings*, pp. 103–16.

28. Michel Huglo, "L'auteur du 'Dialogue sur la musique' attribué à Odon," *Revue de musicologie* 55 (1969): 119–71.

29. *RISM* 2: 46.

30. Huglo, "L'auteur du 'Dialogue,'" pp. 127f.

31. Van Waesberghe has dated the *Enchiriadis* 920–24 in "La place exceptionnelle de l'*Ars musica*," *Revue gregorienne* 32 (1952): p. 95.

32. "... cuius exemplum in solis figuris sonorum dimisi." See Huglo, "L'auteur du 'Dialogue,'" p. 131.

33. Some of these debts are enumerated in van Waesberghe, *De musico-paedagogico*, pp. 147f.

author of the *Dialogus* came to this quaternary division only after all the binary divisions needed for the octave replicates were completed. The inclusion of both square and soft b in the higher octave was also probably owed to Pseudo-Odo.

Guido followed the example of the *Dialogus* also in enumerating the intervals. Their language differs somewhat in that for Pseudo-Odo (chap. 5) the general terms for interval are *coniunctio vocum* (connection or conjunction of sounds) and *differentia*, whereas for Guido it is the more common *modus*, as in the title of chapter 4, "Quod sex modis sibi invicem voces iungantur," for he probably saw that the multiplicity of terms was confusing and avoided *differentia* because it had a special meaning in chant practice. Guido adopted Pseudo-Odo's *consonantia* for the class of interval that joins the notes of a melody, namely the tone, semitone, ditone, semiditone, diatessaron, and diapente.

Guido's theory of the modes is at least partially based on the *Dialogus*, which was a pioneering attempt to define modal differences. Like Pseudo-Odo (chaps. 6, 8), Guido (chap. 13) uses both the numbering one to eight and the Greek numbering protus to tetrardus. The insistence on the last note of a chant as a determinant of mode (Guido, chap. 11; Pseudo-Odo, chap. 8), the injunction to make beginnings and endings of phrases (*distinctiones*) harmonize with the final by relating to it through one of the six *consonantiae* (Guido, chap. 11), are other links with Pseudo-Odo (chap. 8).

Guido's inclusion of range as a factor in the determination of modality may also be attributable to the influence of the *Dialogus*, but Guido's recommendations are more liberal on several points. Whereas Pseudo-Odo does not allow a chant to descend to the fifth note below the final in plagal tritus, evidently because it forms a tritone with the final, Guido does not specifically prohibit it. Guido finds that the authentic tritus rarely goes below the final (John prohibits it<sup>34</sup>), while Pseudo-Odo does not note the exception. Guido permits a melody to rise to the ninth and tenth notes above the final, while Pseudo-Odo stops at the octave. Otherwise, the two authors agree on the ranges of the modes.

If Guido knew *Musica enchiriadis* at the time he wrote *Micrologus*, he shows little evidence of it. Guido's division of the gamut into an octave of *graves*, an octave of *acutae*, and an annexed tetrachord of *superacutae* does not reflect the scale of four disjunct tetrachords in the ascending pattern tone-semitone-tone unique to the *Enchiriadis* treatise, nor its four names for the tetrachords, *graves*, *finales*, *superiores*, and *excellentes*. Of these Guido adopts only the term *graves*, and that for an entire octave.

But the chapters on organum and diaphony (18–19) do reveal some dependence, for example the definition of diaphony:

34. Chap. 12.

*Micrologus*

Diaphonia vocum disiunctio sonat, quam nos organum vocamus, cum disiunctae ab invicem voces et concorditer dissonant et dissonanter concordant.<sup>35</sup>

*Enchiriadis*

Haec namque est, quam Diaphoniam cantilenam, vel assuete, organum, vocamus. Dicta autem Diaphonia, quod non uniformi canore constet, sed concentu concorditer dissono.<sup>36</sup>

Guido's elegant antithesis, literally, "notes disjoined from each other both concordantly dissonating and dissonantly concurring," seems to have been inspired by the older author's "it consists not of uniform song [i.e. unison singing] but of a concordantly dissonant consensus."

The most important parallel between *Micrologus* and *Enchiriadis* are the instructions for improvising or writing organum. Guido (chap. 18) describes a method of singing diaphony in which the organal voice duplicates the chant at the "symphony" of a fourth below, as in *Enchiriadis* (chap. 13). The possibility of doubling the voices to create organum at the fifth, fourth, and octave is also true to the *Enchiriadis*. But no sooner has Guido marveled at the "sociability and hence smoothness" (literal for *societate ac ideo suavitate*<sup>37</sup>) with which these intervals blend, paraphrasing "the smooth mixture" (*suavis commixtio*) of the *Enchiriadis* text, than he rejects the procedure as "harsh" (*durus*), and declares a preference for his own "smoother" method, which is a combination of parallel fourths, oblique motion to avoid the tritone, and convergence (*occursus*) of the voices at a close. Aside from the element of the *occursus*, this method, however, is not unlike that of *Enchiriadis*, chapters 17 and 18.

Otherwise Guido's dependence on previous authors is negligible. Almost as an afterthought in the last chapter he introduces from Boethius the story of Pythagoras's discovery of the ratios of consonances by means of the hammers. The citation of the psychological cures through music effected by David and Asclepiades seem to be derived from Cassiodorus.<sup>38</sup>

These, briefly surveyed, are the links to previous authors. They serve to throw into relief Guido's vigorous independence and originality. Indeed, there have been few works in the history of theory that spring so bravely from the thought of one man. Guido took upon himself the project of articulating several aspects of melody and chant practice never before treated. This is not a place for an extensive commentary, but a few of Guido's major contributions in this book may be signaled.

Guido gave prominence to the principle of affinity, already recognized by Hucbald (119b), which makes possible the ending of a chant on a cofinal as well as final in the protus, deuterus, and tritus (chap. 8). His chapters 15 and 16 constitute the first theory of melody writing in the West. He draws upon

35. Chap. 18, *CSM* 4: 196-97.

36. Chap. 13, *GS* 1: 165b.

37. Chap. 18, *CSM* 4: 198.

38. *Institutiones* 5. 9. Trans. in Strunk, *Source Readings*, p. 92.

grammatical analogies, setting thereby an important precedent, in dividing a melody into progressively smaller subdivisions: distinctions, parts, neumes, and syllables. The comments in these chapters on proportional durations in chant and its rhythmic performance have given rise to varied interpretations and are the more precious because so rare in medieval literature.<sup>39</sup> The motus theory, as it is usually referred to (chap. 16), has also attracted a host of commentaries.<sup>40</sup> It marks the first steps in a theory of melodic direction and combinatoriality, too brief, unfortunately, and undeveloped.

The instructions for the mechanical composition of melody through pairing textual vowels and pitches (chap. 17) is perhaps more important for its implications and the elaborations it inspired than the fecundity of the method itself.<sup>41</sup> It implies that melodic composition was an ongoing and normal occupation of a musician and that then, as now, not everyone was blessed with the divine afflatus for melodic invention. A perplexing detail of the system is that the vowels *a e i o u* are assigned to an ascending series of pitches, when the progression from open to closed vowels would suggest rather a descending scale, at least if voice production in the eleventh century was anything like ours. But it must not have been.

Aside from modern commentaries on individual chapters or problems in Guido's treatise, given in the footnotes above, there are a number of general commentaries dating from as far back as the eleventh century. Much of John's treatise, in the present volume, is a commentary upon Guido. Aribon in his treatise, from around 1070, also contains reflections upon Guido.<sup>42</sup> Other early commentaries are anonymous. The principal ones have been gathered together in one volume by Joseph Smits van Waesberghe, *Expositiones in Micrologum Guidonis Aretini*.<sup>43</sup> These are *Liber argumentorum* and *Liber specierum*, both probably of Italian origin from between 1050 and 1100; *Metrologus*, probably of English thirteenth-century origin; and the *Commentarius anonymus* first edited by C. Vivell in 1917<sup>44</sup> and identified by van Waesberghe as by either a native of Liège or a Bavarian between about 1070

39. Concerning chapter 15 see Utto Kornmüller, "Etwas zum 15. Kapitel des Micrologus von Guido von Arezzo," *Kirchenmusikalisches Jahrbuch* 20 (1907): 116–21; Cölestin Vivell, "Handelt das 15 Kap. des Micrologus Guidos von Arezzo vom Gregorianischen Gesang," *Kirchenmusikalisches Jahrbuch* 21 (1908): 143–44; Richard Crocker, "*Musica Rhythmica* and *Musica Metrica* in Antique and Medieval Theory," *Journal of Music Theory* 2 (1958): 2–23, including a translation of this chapter; Jan W. A. Vollaerts, *Rhythmic Proportions in Early Medieval Ecclesiastical Chant* (Leiden, 1958), pp. 168–72, 177–94, including a translation of chap. 15, pp. 169–72; and J. Smits van Waesberghe, Introduction, *Aribonis De musica*, CSM 2 (Rome, 1951): xvi–xxiv.

40. Kornmüller, "Die Choralcompositionslehre vom 10. bis 13. Jahrhundert," *Monatshefte für Musikgeschichte* 4 (1872): 57–112, and the bibliography in n. 39, above.

41. See van Waesberghe, "Guido of Arezzo and Musical Improvisation," *Musica disciplina* 5 (1951): 55–63.

42. Van Waesberghe, *Aribonis*.

43. Amsterdam, 1957.

44. Cölestin Vivell, *Commentarius anonymus in Micrologum Guidonis Aretini* (Vienna, 1917).

and 1100. A more recent commentary is Hubert Wolking's dissertation, *Guidos "Micrologus de disciplina artis musicae" und seine Quellen*.<sup>45</sup>

The message of *Micrologus* is so rich in significance both for understanding the music of its time and for the beginnings of indigenous Western theory that the full meaning of its text has not been fathomed even after generations of commentary. It is hoped that this translation will invite the probing study that this treatise deserves. The serious student, it goes without saying, will want the Latin version close at hand, for even Warren Babb's assiduously faithful and lucid translation places an interpretation, which it must be, between reader and author.

45. Emsdetten, 1930.

## GUIDO OF AREZZO, *MICROLOGUS*

Translated by Warren Babb

Edited by Claude V. Palisca

- [80] Gone from school are the Muses; there may I hope to induce them,  
Unknown yet to adults, to unveil their light to the young ones!  
Ill will's indiscriminate rage let charity frustrate;  
Dire indeed are the blights that else will ravage our planet,  
Opening letters of these five lines will spell you the author.

### [81] [GUIDO'S EPISTLE TO BISHOP THEODALDUS]

To the most kind father and most revered lord Theodaldus, most radiant with the light of godliness and of all wisdom and worthiest of priests and bishops, from Guido, the salutations of a servant and son—would that he were the least of your monks.

Though I desire at least a modicum of solitary life, Your Gracious Eminence wished to associate my littleness with yourself in the study of the Holy Word. Not that Your Excellency lacks many outstandingly [82] spiritual men, most plentifully fortified by the practice of the virtues and most abundantly distinguished by their pursuit of wisdom, who together with you instruct properly the people entrusted to you and apply themselves assiduously and fervently to meditation on holy things; but that you took pity on the helplessness of my insignificant mind and body, and sheltered and sustained me by the protection of your fatherly goodness; so that if by God's will anything useful should come of me, God will impute it to your merit.

Since it was a matter of usefulness to the church, your authority decreed that this way of training in the art of music—for which I am mindful that with God's help I have toiled not in vain—be published. Just as [83] you created by an exceedingly marvelous plan the church of St. Donatus, the bishop and martyr, over which you preside by the will of God and as his lawful vicar, so likewise by a most honorable and appropriate distinction you would make the ministers of that church cynosures for all churchmen throughout almost the whole world. In very truth it is sufficiently marvelous and desirable that even boys of your church should surpass in the practice

of music the fully trained veterans of all other places; and the height of your honor and merit will be very greatly increased because, though subsequent to the early fathers, such great and distinguished renown for learning has come to this church through you.

[84] Therefore, since I neither would nor could go against your command, fitting as it is, I offer to your most sagacious and fatherly self the precepts of the science of music, explained, so far as I could, much more clearly and briefly than has been done by philosophers, neither in the same way, for the most part, nor following in the same tracks, but endeavoring only that it should help both the cause of the church and our little ones. The reason that this study has remained obscure up to now is that, being truly difficult, it has been explained in simpler terms by no one. How it came about that I first undertook this explanation, and with what profit and what effort, I shall set forth in a few words.

#### [85] PROLOGUE

Since both my natural disposition and my emulation of good men made me eager to work for the general benefit, I undertook, among other things, to teach music to boys. Presently Divine Grace favored me, and some of them, trained by imitating the [steps of the mono]chord, with the practice of our notation, were within the space of a month singing so securely at first sight chants they had not seen or heard, that it was the greatest wonder to many people. But if someone cannot do that, I do not know with what face he can venture to call himself a musician or a singer.

[86] I was extremely sorry for our singers who, though they should persevere a hundred years in the study of singing, can never perform even the tiniest antiphon on their own—always learning, as the apostle says, and never arriving at knowledge of the truth.<sup>1</sup> Desiring therefore to set forth my own so useful method of study for the general benefit, I summarized as briefly as I could, out of the copious musical theorizing which with God's help I have at various times collected, certain things that I believed would help singers. But I judged those musical matters not worth mention which are of little benefit for singing, as well as any of the things that are said but cannot be understood—not [87] worrying about any who might turn livid with ill will so long as the training of others made progress.

Here ends the prologue. The chapters begin.[88]

#### Chapter

- 1 What one should do to prepare himself to study music
- 2 What notes are, of what nature, and how many

1. 2 Tim. 3:7.



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- 3 On their location on the monochord
  - 4 That notes should be joined to one another by six intervals
  - 5 On the diapason, and why there are only seven notes
  - 6 Also on the divisions of the monochord and their meaning
  - 7 On the affinities of notes through the four modes
  - 8 On other affinities and on b and b
  - 9 Also on the resemblance of notes, which is perfect only at the diapason [89]
  - 10 Also on the modes and on recognizing and correcting a wrong melody
  - 11 What note should hold the chief place in a chant and why
  - 12 On the division of the four modes into eight
  - 13 On the recognition of the eight modes by their height and depth
  - 14 On the tropes and on the power of music
  - 15 On grateful melodic lines and composing them
  - 16 On the manifold variety of sounds and neumes
  - 17 That anything that is spoken can be made into music [90]
  - 18 On diaphony, that is the principles of organum
  - 19 Testing this diaphony through examples
  - 20 How the nature of music was discovered from the sound of hammers

## CHAPTER 1

*What one should do to prepare himself to study music*

[91] Let him who seeks our training learn some chants copied in our notation, let him train his hand in the use of the monochord, [92] and let him frequently ponder these rules, until, having learned the effect and character of the notes, he can smoothly sing unfamiliar music as well as familiar. Since we learn the notes, which are the primary foundation of this art, more easily at the monochord, let us first see how science, imitating nature, has given them their separate places thereon.

## CHAPTER 2

*What the notes are, of what nature, and how many*

[93] The notes on the monochord are these. First is placed Greek Γ, added by the moderns. There follow seven letters of the alphabet as the *graves* [low], and therefore written in larger letters, thus: A B C D E F G. [94] After these the same seven letters are repeated as the *acutae* [high], but they are indicated by smaller letters. Among them, between a and b [i.e. b<sup>a</sup>] we put another b which we make round, whereas we made the former one square, thus: a b b c d e f g. We add by means of these same letters, but differently written, the tetrachord of the *superacutae* [above the *acutae*], in which we likewise have the two forms b and b, thus: a b b c d. The *superacutae* are considered superfluous



by many, but we had rather have too much than too little. [95] So in all there are twenty-one, namely  $\Gamma A B C D E F G a b b c d e f g a b b c d$ . Their location, which the learned either are silent about or confuse by excessive obscurity, is here explained briefly, yet fully enough even for boys.

### CHAPTER 3

#### *On the location of notes on the monochord*

[96] After marking  $\Gamma$  at the beginning, divide the space beneath the string from there to the other end into nine parts, and at the end of the first ninth put the letter A, with which all the ancients began. [97] When you have likewise measured a ninth part [of the length] from A to the far end of the string, in the same way place the letter B. After this, going back to  $\Gamma$ , divide the string from there to the other end by four, and at the end of the first quarter you will find C. By a similar division into quarters, just as C was found from  $\Gamma$ , in the same way you will find successively D from A, E from B, F from C, G from D, a from E, and b-flat from F. The following notes [98] are all easily obtained one after the other as halfway points of notes similar in sound and the same in letter: so, halfway from B to the far end of the string, you put another b. Likewise C will point out another c, D will point out another d, E another e, F another f, G another g, and the rest of the notes in the same way. You could continue up or down thus ad infinitum, did not the precept of art restrain you by its authority. Of the many and various systems of dividing the monochord, I have given one, because when one's [99] attention is turned from many things to one, that one is grasped without trouble. It is particularly useful too, since it is both easily learned and, once learned, rarely forgotten.

Here follows another method of dividing the monochord, which is harder to memorize, but by it the monochord is more quickly divided. You make nine steps, that is [equal] segments, from  $\Gamma$  to the other end. The first step will end at A, the second will have no letter, the third will end at D, the fourth will be unlettered, the fifth will end at a, the sixth at d, the seventh at  $\sharp$ , and the others will be unlettered. [100] Likewise, when you divide [the length] from A to the other end into nine parts, the first step will end at B, the second will be unlettered, the third will end at E, the fourth will be unlettered, the fifth will end at b, the sixth at e, the seventh at  $\flat$ , and the rest will be unlettered.<sup>1</sup> When you divide [the length] from  $\Gamma$  to the other end into quarters, the first step will end on C, the second on G, the third on g, the fourth at the end of the string. Of the four similar steps from C to the other end of the string, the first will end on F, the second on c, the third on  $\sharp$ , the fourth at

1. As the *Commentarius anonymus* noted (Vivell ed., p. 10, van Waesberghe, *Expositiones*, p. 104), this monochord is incomplete, for Guido failed to derive  $\flat$  and  $\sharp$  (the commentator said  $\flat$  was missing, but he must have had a faulty text).

the end of the string. Of the quarter-length steps from F, the first will end on b-flat, the second on f.

[101] For laying out the notes on the monochord let these two systems of measurements suffice, [102] of which the former is the easiest to memorize, while the latter is the quickest to apply. Next, all the intervals arising out of the divisions [of the string] will be briefly set forth.

#### CHAPTER 4

*That notes should be joined to each other by six intervals*

[103] With the notes laid out in this way, sometimes a greater distance is noticed between one note and another, as between Γ and A and between A and B, and sometimes a lesser, as between B and C, and so forth.

The greater distance is called a tone, and the smaller a semitone, from *semis* [a half], that is, not a full tone.

[104] Between any note and the third from it there is sometimes a ditone, that is two tones, as from C to E, and sometimes a semiditone, which has only a tone and a semitone, as from D to F, and so forth. A diatessaron is formed when between two notes there are two tones and a semitone in any order, as from A to D and from B to E, and so forth. A diapente is a tone larger, and occurs whenever between notes there are three tones and one semitone, as from A [105] to E and from C to G, and so forth.

Thus you have six melodic intervals [*consonantiae*], namely, tone, semitone, ditone, semiditone, diatessaron, and diapente. In no chant is one note joined to another by any other intervals, going either up or down. Since [106] all melody [*harmonia*] is formed by so few formulas [*clausulae*], it is most helpful to commit them firmly to memory, and, until they are completely perceived and recognized in singing, never to stop practicing them, since when you hold these as keys, you can command skill in singing—intelligently, and therefore more easily.

#### CHAPTER 5

*On the diapason and why there are only seven notes*

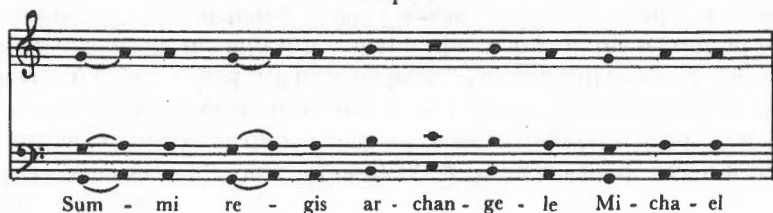
[107] The diapason is the interval in which a diapente and a diatessaron are combined; for while from A to D is a diatessaron and from that same D to acute a is a diapente, from A to the other a is a diapason.

[108] Its property is to have the same letter on both ends, as from B to b, from C to c, from D to d, and so forth. Just as both sounds are notated by the same letter, so both are held and believed to be in all respects of the same nature and the most absolute likeness.

Just as when seven days have elapsed we repeat the same ones, so that we always name the first and eighth the same; so we always represent and name the first and eighth notes the same way, because we perceive that they sound

together with a natural concord, [109] as D and d. For from each of them you descend by a tone, a semitone, and two tones, and ascend by a tone, a semitone, and two tones. Thus, in singing, if two or three or more singers, as may be feasible, begin and sing through the same antiphon, whichever it be, with the various notes separated by this interval, you will be amazed that you get the same notes at different pitches [*loci*] but with a minimal difference of sound, and that the same melody resounds in the *graves*, *acutae*, and *superacutae* as if a single thing, thus [110]:

Example 1



[111] Likewise if you should sing the same antiphon partly in a low and partly in a high register, or however else you transpose it at the interval of a diapason, that same unity of the notes [112] will be apparent. Therefore the poet spoke very rightly of "the seven different notes,"<sup>1</sup> because even if more occur it is not an addition of other ones, but a renewal and repetition of the same ones. For this reason we, like Boethius<sup>2</sup> and the musicians of old, indicate all musical sounds by seven letters. However some people nowadays [113] incautiously employ only four symbols. They indicate every fifth sound always by the same symbol, though it is true beyond a doubt that some notes disagree completely with those a fifth away, and that no note agrees perfectly with its fifth. For no note agrees perfectly with any other except its octave.

## CHAPTER 6

### *Also on the divisions of the monochord and their meaning*

[114] To compress many things about the division of the monochord into a few words: the diapason always moves in two steps to the other end of the string, the diapente in three, the diatessaron in four, and the tone in nine; and the more steps they have, the shorter the distance of these. But you can find no other divisions than these four.

[115] "Diapason" means "through all," either because it includes all the notes, or because citharas in antiquity had eight strings extending through a

1. "... septem discrimina vocum," Vergil, *Aeneid* 6. 646.

2. Guido may have had a copy annotated by a modern author, for Boethius did not limit himself to seven letters.

diapason. In this interval the lower note has two units of length; the upper, one, as A and a. "Diapente" derives from "five," for there are five notes in its span, as from D to a. Its lower note has three units of length; its upper, two.

"Diatessaron" derives from "four," both because it includes four notes and because its lower note has four units of length while its upper has three, as from D to G.

[116] You should remember that these three intervals are called "symphonies,"<sup>1</sup> that is, smooth unions of notes, because in the diapason the different notes sound as one and because the diapente and the diatessaron are the basis [*iura possident*] of diaphony, that is, organum,<sup>2</sup> and produce notes similar in every case.

The tone gets its name from *intonandus*, that is "to be sounded," and gives nine units of length to its lower note compared with eight to its higher. The semitone, however, the ditone, and the semiditone, although they connect notes in singing, get no dividing point.<sup>3</sup>

## CHAPTER 7

### *On the affinities of notes through the four modes*

[117] Since there are just seven notes—seeing that the others, as we have said, are repetitions—it suffices to explain the seven that are of different modes and different qualities. The first mode of notes arises when from a note one descends by a tone and [118] ascends by a tone, a semitone, and two tones, as from A and D. The second mode arises when from a note one descends by two tones and ascends by a semitone and two tones, as from B and E. The third is that in which one descends by a semitone and two tones but ascends by two tones, as from C and F. The fourth goes down by a tone but rises by two tones and a semitone, like G.<sup>1</sup>

Notice that they follow each other in order. Thus, the first [mode] on A, the second [119] on B, the third on C; and also the first on D, the second on E, the third on F, and the fourth on G. Notice too that these affinities of notes are made through the diatessaron and the diapente, for A is joined to D, and B to E, and C to F by the lower diatessaron, but by the upper diapente, [as in Fig. 1].

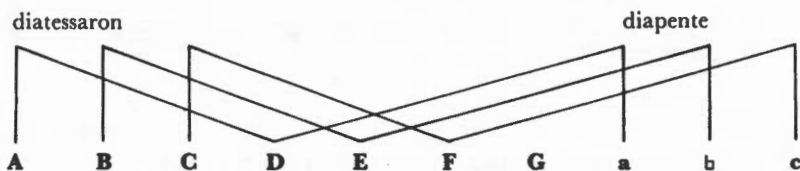
1. *Symphonia* is the standard term, from Cassiodorus (*Institutiones*. 2. 5. 7) up to Guido.

2. See below, chap. 18.

3. Since in Pythagorean tuning their ratios involve terms that are numerically large, for example 32:27 for the semiditone, 81:64 for the ditone, the number of string divisions required to produce them would be impractical on a monochord.

1. While the other modes have pairs of notes, the fourth, on G, lacks a pair, because it has no affinity, as proved in Fig. 1.

Figure 1



## CHAPTER 8

VER

*On other affinities and on b and b*

[122] Whatever other affinities there are, they are produced likewise by the diatessaron and the diapente. For since the diapason contains in itself a diatessaron plus a diapente and has the same letters on each end, there is always in the middle of its [123] length a letter which is so related to either end of the diapason that with whatever letter in the low register it gives a diatessaron, with that same one in the high register it makes a diapente, as is notated in the diagram above; and with whatever letter in the low register it made a diapente, with that same one in the upper register it will give a diatessaron, as A, E, a. Now a and E agree in that one descends from them by two tones and a semitone. Also, since G sounds with C and D by these same intervals, it has taken over the descent of the one and the ascent of the other; for C and G rise [124] similarly by two tones and a semitone, and D and G descend similarly by a tone and a semitone.

Moreover b-flat, which is less regular and which is called "added" or "soft," has a concord with F, and is added because F cannot make a concord with b a fourth away, since it is a tritone distant. You should not join b and b in the same neume.

We use b-flat mostly in that chant in which F or f [125] recurs rather extensively, either low or high. Here b-flat seems to create a certain confusion and transformation, so that G sounds as protus and a as deuterus, whereas b[-flat] itself sounds as tritus. Many therefore have never mentioned b[-flat], whereas the other b has been acceptable to all. But if you wish not to have b-flat at all, alter the neumes in which it occurs, so that instead of F G a and b-flat you have G a b. If it is the kind of neume that, going up after D E F, [126] wants two tones and a semitone—which causes this b [-flat]—or going down after D E F wants two whole tones, then instead of D E F use a b c, which are of the same mode and have the perfectly regular descents and ascents that were just mentioned. For it best avoids a sad confusion if one apportions such ascents and descents clear-sightedly between D E F and a b c.

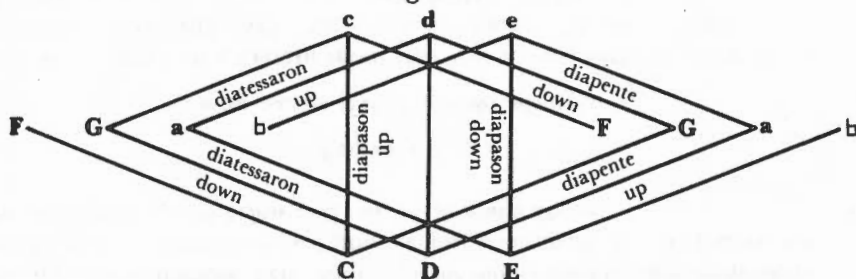
We have confined ourselves to just a few things about the similarities



between notes, because insofar as similarity is sought out between different things, to this extent is lessened that diversity which [127] can prolong the labor of the confused mind, for organized material is always more easily grasped than unorganized.

All the modes and the "distinctions" of the modes are connected with these three notes [C, D, E]. Now I call "distinctions" what many call "differences." But the term "difference" is used because something distinguishes or [128] divides plagal modes from authentic; otherwise, it is misused. All other notes have some concordance with these three, either below or above; but no notes show themselves similar to other notes in both directions, except at the diapason. Anyone who seeks can find a representation of all this in the chart [Fig. 2] [129].

Figure 2



## CHAPTER 9

*Also on the resemblance of notes, which is perfect only at the diapason*

[130] Insofar as the above-mentioned notes are alike—some in descent, some in ascent, some in both—they will make neumes sound alike. [131] Thus the knowledge of one makes another clear to you. As for those notes in which no resemblance is evident, or which are of different modes, no one of them will accept the neume or chant of another; or, if you force it to receive one, it will change its sound.

Thus if one should wish to begin on E or F, which are notes of other modes, an antiphon that should begin on D, one would soon tell by ear how great a change was taking place. But on D and a, which are of the same mode, we can most often begin or end the same piece. [132] I say "most often," and not "always," because likeness is not complete except at the octave.

For where there is a difference in the arrangement of the tones and semitones, there is bound to be one also in [the sound of] the neumes. And even among the notes just mentioned, which are assigned to the same mode, dissimilarities are found. For from D you can go down only one whole tone, but from a, two; and so also elsewhere.

## CHAPTER 10

*Also on the modes and on recognizing and correcting a wrong melody*

[133] Here are [described] the four modes or tropes, which are improperly called "tones." They are so differentiated from one another by their inherent dissimilarity, that none of them will grant another a place in its domain, and any one of them either transforms a neume from another mode or never even admits it.

[134] False notes also creep in through inaccuracy in singing; sometimes performers deviate from well-tuned notes, lowering or raising them slightly, as is done by untrue human voices. Also, by ascending or descending more than is right for the prescribed interval, we pervert a neume of a certain mode into another mode or we begin at a place [in the scale] which does not admit [that] note.

[137] To make this clear by an example, take the communion *Diffusa est gratia*. Many put *propterea*, which should begin on F, a whole tone down, although there is not a whole tone just below F. As a result the end of this communion comes where there is no note. The place and mode where [138] each neume begins should be left to the judgment of the singer, so that if it needs to be transposed [*si motione opus est*], he may search out related [*affines*] notes. These modes or tropes we name, from the Greek, protus, deuterus, tritus, and tetrardus.

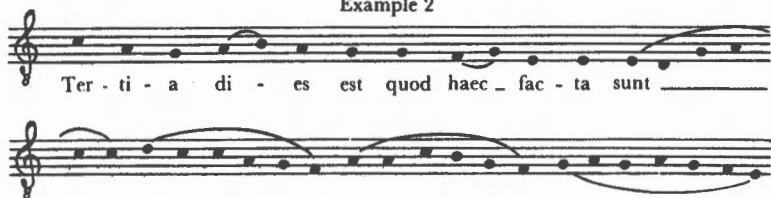
## CHAPTER 11

*What note should hold the chief place in a chant and why*

[139] Though any chant is made up of all the notes and intervals, the note that ends it holds the chief place, for it sounds both longer and more lasting. The previous notes, as is evident to trained musicians only, [140] are so adjusted to the last one that in an amazing way they seem to draw a certain semblance of color from it.

The other notes should have a harmonious relationship with the note that ends a neume by means of the aforesaid six melodic intervals. The beginning of a chant and the end of all its phrases and even their beginnings need to cling close to the note that ends the chant. An exception is that when a chant ends on E it often [141] begins on c, which is a diapente plus a semitone away, as the antiphon:

Example 2



[144] Furthermore, when we hear someone sing, we do not know what mode his first note is in, since we do not know whether tones, semitones, or other intervals will follow. But when the chant has ended, we know clearly from the preceding notes the mode of the last one. For at the start of a chant you do not know what will follow, but at its end you realize what has gone before. Thus the last note is the one we are better aware of. So if you wish to add to your chant either a verse or a psalm or anything else, [145] you should adjust it most of all to the final note of the former, not go back and consider the first note or any of the others. This too we may add, that carefully composed chants end their phrases chiefly on the final note [of the chant].

It is no wonder that music bases its rules on the last note, since in the elements of language, too, we almost everywhere see the real force of the meaning in the final letters or syllables, in regard to cases, numbers, persons, and tenses. Therefore, since all praise, too, is sung at the end, we rightly say that every chant is subject to, and takes its rules from, that mode which it sounds last.

[146] In any chant it is right to go down [as far as] a fifth from the final note and up [as far as] an octave, though it often happens that, contrary to the rule, we go up to a ninth or tenth. Hence DEFG have been established as the final notes, because their location on the monochord fits in preeminently with the upward and downward progress just mentioned. For they have one tetrachord of the *graves* below and two of the *acutae* above.

## CHAPTER 12

VER

*On the division of the four modes into eight*

[147] Some chants in a certain mode, say the protus, with respect to their final notes are low and level, others high and raised. Therefore, when verses or psalms or whatever else, as we said, had to be fitted to their endings, although they continued in one and the same mode, [148] they could still not be adjusted to these different ranges. For what was added on, if it was low-pitched, did not go well with the high notes; but if it was high, it was at odds with the low notes. So the plan was that each mode should be divided into two, namely a high and a low, and, according to regulations assigned, high notes should go with high and low with low; and each high mode should be called authentic, that is original and principal, while the low mode should be called plagal, that is, collateral and lesser. For he who is said to stand at my side is lower [*minor*] than I; otherwise, if he were higher [*major*], I should be said rather to stand at his side.

Since therefore one says authentic protus [*autentus protus*] and plagal of the protus [*plagis proti*], and likewise with the rest, these modes, which naturally were four according to their notes, have been made [149] eight in chants. A mistaken usage transmitted by the Latins is to say first and second instead of authentic protus and the plagal of the protus, third and fourth instead of



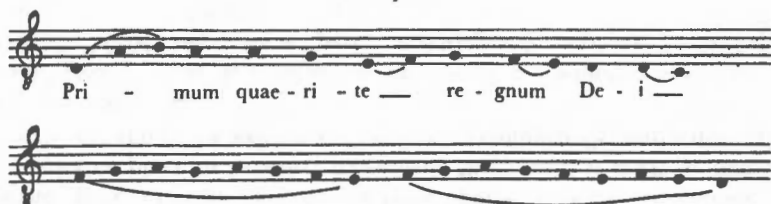
authentic deuterus and the plagal of the deuterus, fifth and sixth instead of authentic tritus and plagal of the tritus, and seventh and eighth instead of authentic tetrardus and plagal of the tetrardus.

### CHAPTER 13

#### *On the recognition of the eight modes by their height and depth*

[150] Thus there are eight modes, as there are eight parts of speech<sup>1</sup> and eight kinds of beatitude;<sup>2</sup> and every melodic line, as it moves to and fro among these, is diversified by eight dissimilar qualities.<sup>3</sup> For ascertaining these modes in chants, certain neumes have been [151] composed,<sup>4</sup> so that we learn the mode of the chant from the way it fits these, just as we often discover from the way it fits the body which tunic is whose. For example,

Example 3



[154] as soon as we have seen that this neume [Example 3] accords with the end of an antiphon, there is no need to doubt that it is authentic protus; and similarly with the other modes. Most helpful for this are the verses of the responsories of nocturns, the psalms of the offices, and all the chants that are prescribed in the formulas of the modes.<sup>5</sup> It is a wonder if someone who does not know these understands any part of what is being said here. For there one can foresee on what notes of the particular modes chants less often or more often begin, and on what notes they do so least. Thus in plagal modes it is

1. Grammatically speaking, a word is either a noun, verb, pronoun, adjective, adverb, preposition, conjunction, or interjection.

2. The blessed qualities enumerated in the Sermon on the Mount, Matt. 5:3-11.

3. These must be the eight modes.

4. Guido refers here to either the *Nosane* formulas (see above pp. 6-8), or the Latin formulas of the modes, which begin with the melody "Primum quaerite regnum Dei" for the first mode, as in Berno, *Tonarius*, GS 2: 79. See Antoine Auda, *Les modes et les tons de la musique*, pp. 176ff. and the references given in the Introduction to Hucbald, above, n. 14 to 18.

5. "... in modorum formulis"—here Guido may be referring once again to the series of melodic specimens for each mode that begins with "Primum quaerite regnum Dei" (see n. 4 above), or, as Huglo believes ("L'auteur du 'Dialogue,'" p. 166), to a tonary, since the term *tonarius* was not yet current in Italy, and possibly the tonary of Abbot Odo, the Prologue of which is in GS 1: 248-249a, the tonary itself in GS 2: 117-49. Compare the usage in Guido's *Epistola*, GS 2: 48a: "Nota autem, quomodo modos dicimus eos, qui in formulis tonorum non proprie sed abusive nominantur toni, cum modi vel tropi proprie dicantur." And later on the same page: "Ideoque habes in formulis modorum duas formulas in unoquoque modo." See also the references in the translation of John, chap. 11, n. 7, p. 120.

least permissible to rise either in beginnings or endings of phrases [155] to the fifth degree [above the final], although one may very rarely rise to the fourth [degree]. In authentic modes, however, except the deuterus, it is most unsuitable to rise in these beginnings and endings of phrases to the sixth degree. Yet those of the plagal of the protus and the plagal of the tritus go as high as the third, and those of the plagal of the deuterus and the plagal of the tetrardus go as high as the fourth.

You should remember, furthermore, that authentic modes scarcely go more than one note below their finals, as is shown by the testimony of the chants generally used. From these it is evident that the authentic tritus does so very rarely because of the flaw of the semitone just beneath. [The authentic modes] go up an octave or ninth or even a [156] tenth. Plagal modes, however, go down and up a fifth. Yet the sixth above is also allowed by the authorities, as are the ninth and tenth in authentic modes. Moreover the plagals of the protus, deuterus, and tritus sometimes end by necessity on high a, b, and c respectively.

The above-mentioned rules are observed very particularly in antiphons and responsories, whose chants [157] should be based on the customary rules so that they will join well with psalms and verses. However, you will find a number of chants in which the low and the high are so intermingled that one cannot make out whether they should be assigned to authentic or plagal. Furthermore, in studying chants new to us, we are helped chiefly by juxtaposing the aforesaid neumes and appendages [*subiunctiones*], since from the way these fit we come to see the particular character of each note through the effect of the "tropes." "Trobe" is the aspect of chant which is also called "mode," and we shall now discuss it.

## CHAPTER 14

### *On the tropes and on the power of music*

[158] Some men who are well trained in the particular characters and, so to say, the individual features of these tropes recognize them the instant they hear them, as one who is familiar with the different peoples, when many men are placed before him, can observe their appearance and say, "This is [159] a Greek, that one a Spaniard, this is a Latin, that one a German, and that other is a Frenchman." The diversity in the tropes so fits in with the diversity in people's minds that one man is attracted by the intermittent leaps of the authentic deuterus, another chooses the delightfulness of the plagal of the tritus, one is more pleased by the volubility of the authentic tetrardus, another esteems the sweetness of the plagal tetrardus, and so forth.

Nor is it any wonder if the hearing is charmed by a variety of sounds, since the sight rejoices in a variety of colors, the sense of smell is gratified by a variety of odors, and the palate delights in changing flavors. For thus through the

windows of the body [160] the sweetness of apt things enters wondrously into the recesses of the heart. Hence it is that the well-being of both heart and body is lessened or increased, as it were, by particular tastes and smells and even by the sight of certain colors. So it is said that of old a certain madman was recalled from insanity by the music of the physician Asclepiades.<sup>1</sup> Also that another man was roused by the sound of the cithara to such lust that, in his madness, he sought to break into the bedchamber of a girl, but, when the cithara player quickly changed the mode, was brought to feel remorse for his libidinousness and to retreat abashed. [161] So, too, David soothed with the cithara the evil spirit of Saul and tamed the savage demon with the potent force and sweetness of this art.<sup>2</sup> Yet this effect is fully clear only to Divine Wisdom, thanks to which, indeed, we have gained some insight into obscure things. Since we have poured forth not a few words on the power of this art, let us now see what is requisite for shaping good melodic lines.

## CHAPTER 15

### *On grateful melodic lines and composing them*<sup>1</sup>

[162] Just as in verse there are letters and syllables, "parts" and feet and lines, so in music there are phthongi, that is, sounds, of which one, [163] two, or three are grouped in "syllables"; one or two of the latter make a neume, which is the "part" of music; and one or more "parts" make a "distinction," that is, a suitable place to breathe. Regarding these units it must be noted that every "part" should be written and performed connectedly, and a musical "syllable" even more so.

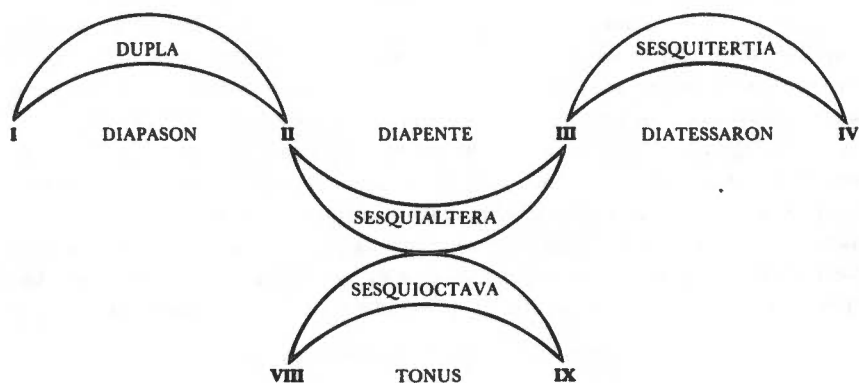
A "hold" [*tenor*]<sup>2</sup>—that is, a pause on the last note—which is very small for a "syllable," [164] larger for a "part," and longest for a phrase [*distinctio*], is in these cases a sign of division. It is good to beat time to a song as though by metrical feet. Some notes have separating them from others a brief delay [*morula*] twice as long or twice as short, or a trembling [*tremula*], that is, a "hold" of varying length, which sometimes is shown to be long by a horizontal dash added to a letter. [165] Special care should be taken that neumes, whether made by repeating one note or joining two or more, be always arranged to correspond to each other either in the number of notes or in the relationship of the durations [*tenores*]. At some times let equal neumes be answered by equal; at others let "simple" neumes be answered by those two or three times [as long]; and at still others let neumes be juxtaposed with others three-halves or four-thirds [their size] [see Fig. 3].

1. This story about the Greek physician Asclepiades is told by Censorinus, *De In die natali* 12; Martianus Capella, *Satyricon* 9; and Cassiodorus, *Inst.* 5. 9, from whom Guido probably got it.

2. I Sam. 16: 23. This story too is told by Cassiodorus, *Inst.* 5. 9.

1. For a listing of some of the commentaries and translations of this chapter, see the Introduction to this treatise, n. 39.

Figure 3



[167] Let the musician consider with which of these proportions [*divisiones*] he will construct the chant that is under way, as the versifier considers with which feet he will make the verse. However, the musician does not restrict himself by such stringency of rule, since in every way this art keeps transforming itself through a reasonable variety in the ordering of notes. Even though we often may not grasp this reasonableness, still that is thought to be reasonable which pleases a mind in which reason resides. Yet these and other such things are better demonstrated in speaking than can well be done in writing.

[168] The musician should also plan that the phrases be of the same length, like lines of verse, and be sometimes repeated, either the same or modified by some change, even though slight, and, if they are particularly beautiful, be duplicated, with their "parts" not too diverse; and let those occasional phrases that are the same be varied as to intervals [*per modos*], or, if they retain the same intervals, let them be heard transposed higher or lower.

Also a neume, turning back on itself, may return the same way it came and by the same steps.

[169] Also note that when a neume traverses a certain range or contour by leaping down from high notes, another neume may respond similarly in an opposite direction from low notes, as happens when we look for our likeness confronting us in a well.

Sometimes, too, let one syllable have one or more neumes, and at other times let one neume be divided among more than one syllable. [170] These—indeed all neumes—will be varied, in that in some places they will begin from the same note, in other places from a different one, according to the various qualities of low or high pitch.

Also let almost all phrases proceed to the principal note [of the mode], that is, the final, or some note related to it [*affinis*] if such be chosen instead of the final. Just as the same note may sometimes end all the neumes or the

great majority of the phrases, sometimes, too, let it begin them, as can be found in Ambrosian [chant], if you are interested. [171] But there are, as it were, prose chants that follow these [practices] less, in which no care is taken as to whether some of the "parts" are longer and some shorter and whether the phrase endings [*distinctiones*] are found in indiscriminate locations in the manner of *prosaes*.

I speak of chants as metrical because we often sing in such a way that we appear almost to scan verses by feet, as happens when we sing actual meters—in which one must take care lest neumes of two syllables persist excessively without an admixture of some of three or four syllables. For just as lyric [172] poets join now one kind of foot, now another, so composers reasonably juxtapose different and various neumes. Diversity is reasonable if it creates a measured variety of neumes and phrases, yet in such a way that neumes answer harmoniously to neumes and phrases to phrases, with always a certain resemblance. That is, let the likeness be incomplete, in the manner of the outstandingly lovely chant of St. Ambrose.

The parallel between verse and chant is no slight one, since neumes [173] correspond to feet and phrases to lines of verse. Thus one neume proceeds like a dactyl, another like a spondee, and a third in iambic manner; and you see a phrase now like a tetrameter, now like a pentameter, and again like a hexameter, and many other such parallels.

Let the subdivisions [*partes*] and phrases of both the neumes and the words end at the same time, [174] and do not let a long stay [*tenor*] on any short syllables or a short stay on long ones create an impropriety, though this will rarely demand attention.

Let the effect of the song express what is going on in the text, so that for sad things the neumes are grave, for serene ones they are cheerful, and for auspicious texts exultant, and so forth.

We often place an acute or grave accent above [the vowels in the text for] the notes, [175] because we often utter them with more or less stress, so much so that the repetition of the same note often seems to be a raising or lowering.

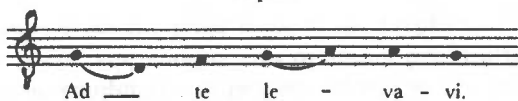
Towards the ends of phrases the notes should always be more widely spaced as they approach the breathing place, like a galloping horse, so that they arrive at the pause, as it were, weary and heavily. Spacing notes close together or widely apart, as befits, is a good way to indicate this effect [in writing].

At many points notes "liquesce," like the liquid letters, so that [176] the interval from one note to another is begun with a smooth glide and does not appear to have a stopping place en route. We put a dot like a blot beneath the liquescent note,<sup>2</sup> thus:



2. The liquescent clivis appears in *LU* 318 at the syllable "Ad":

Example 4



[177] If you wish to perform the note more fully and not make it liquesce, no harm is done; indeed, it is often more pleasing.

Do everything that we have said neither too rarely nor too unremittingly, but with taste.

## CHAPTER 16

### *On the manifold variety of sounds and neumes*

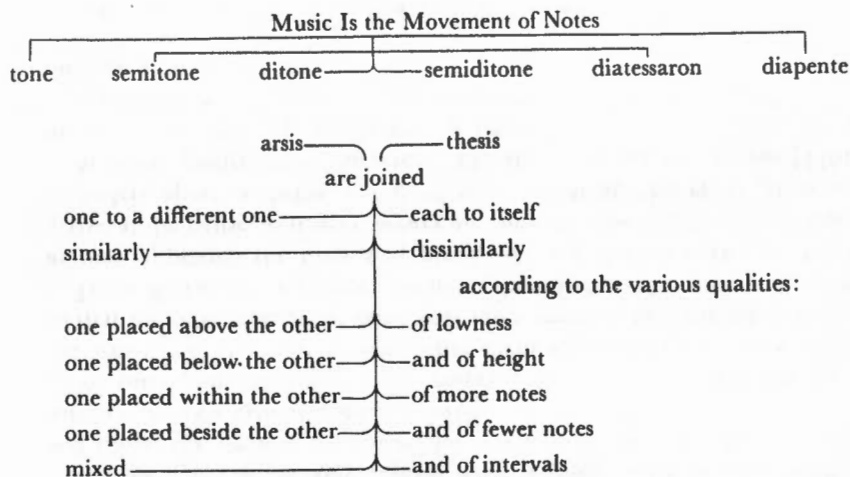
[178] It should not seem surprising that such an abundance of such different chants is created from so few notes—notes that are joined, as we said, by only six intervals either up or down. But from the letters, likewise few, not so very many syllables are made, [179] for the number of syllables can be estimated. Yet a boundless multitude of words [*partes*] has grown out of these syllables, and in verse how numerous are the kinds of meters from a few feet! One kind of meter, like the hexameter, is found varied in many ways. Let the grammarians investigate how this is done; let us, if we can, see in what ways we can make neumes that are different from each other.

Now melodic motion—which, we said, was made up of six intervals—consists of arsis and thesis, [180] that is, ascent and descent. Of this twofold motion, arsis and thesis, every neume is composed, except for repeated notes and single notes. Next, arsis and thesis are combined, either with themselves, as arsis to arsis and thesis to thesis, or each with the other, as arsis to thesis and thesis to arsis; and this combination is made now of like, now of unlike [elements].

Unlikeness arises if of the aforesaid melodic movements one has more [181] or fewer notes than the other, or closer together or farther apart. Furthermore, when a combination is made of either similar or dissimilar elements, one melodic figure [*motus*] will either be placed above another, that is, placed among higher notes; or placed below it; or placed beside, that is, so that the end of one and the beginning of the other are at the same pitch; or placed within, that is, so that one melodic figure is placed within the span of the other and is less low and less high; or mixed, that is, placed partly within and partly below or above or beside. Again, these [182] configurations can be classified according to various qualities: of lowness or height of pitch; of more or fewer notes; and of the intervals. The neumes, too, can be varied in all these ways, and occasionally the phrases.

We have appended a diagram of this topic, so that one can more easily get the picture of it [Fig. 4.]. [184]

Figure 4



## CHAPTER 17

*That anything that is spoken can be made into music*<sup>1</sup>

[186] Having briefly discussed the foregoing, we shall present to you another very simple matter, most profitable to consider though hitherto unheard of. While by it a basis [*causa*] for all [187] melodies will become perfectly clear, you will be able to retain for your use whatever you find appropriate and still reject whatever appears objectionable.

Consider, then, that just as everything that is spoken can be written, so everything that is written can be made into song. Thus, everything that is spoken can be sung, for writing is depicted by letters.

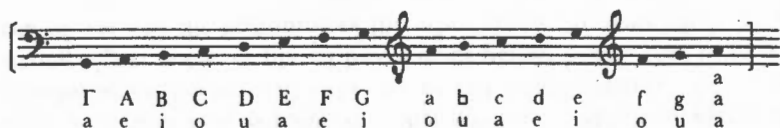
Not to draw out our method to great length, let us take from these letters only the five vowels. Without them, manifestly, no other letter or syllable [188] can sound, and it is for the most part due to them whenever an agreeable blending is found in the different units [*partes*]. Thus, in verse we often see such concordant and mutually congruous lines that you wonder, as it were, at a certain harmony of language. And if music be added to this, with a similar interrelationship, you will be doubly charmed by a twofold melody.

Let us take then these five vowels. Perhaps, since they bring such euphony to words, they will offer no less harmony to the neumes. Let them be placed

1. See the commentary in van Waesberghe, "Guido of Arezzo and Musical Improvisation," *Musica disciplina* 5 (1951): 55-63.

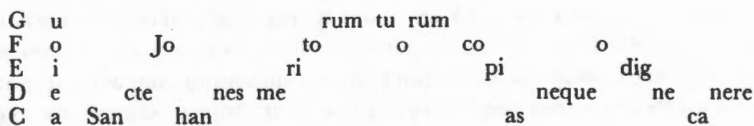
in succession beneath the letters of the monochord, and, since they are only five, let them be repeated until beneath each note its particular vowel is written [see Ex. 5].

Example 5



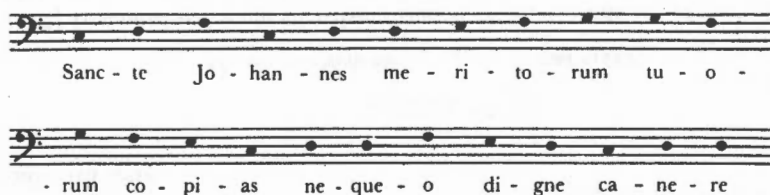
[189] Reflect about this arrangement. Since all speech is activated by these five letters, it should not be denied that five notes also may be set in motion among one another, as we have said. Since this is so, let us take any phrase, adding to its syllables those tones which are indicated by the vowels of these same syllables and sing them, as written beneath [Fig. 5, Ex. 6].

Figure 5



[190]

Example 6



What has been done with this text can indubitably be done with any. By this system scarcely any tune [*symphonia*] would get less than five notes, and there would be no way to get beyond these five, as you may often wish. So that thus no onerous compulsion be laid on you and so that you can range about a little more freely, add another row of vowels beneath the first, but varied so that it begins from the third place of the earlier row, in this way [Ex. 7]. [191]



## Example 7

Γ A B C D E F G a b c d e f g a  
 a e i o u a e i o u a e i o u a  
 o u a e i o u a e i o u a e i o

Here, with two vowels beneath each sound—the five vowels being present—since beneath each sound there is not just one vowel but a second also, you have sufficiently freer scope to proceed at will with more extended or more confined melodic movement. So now, with this arrangement, let us see what kind of musical setting [*symphonia*] for this verse its own vowels will provide [Ex. 8]. [192]

## Example 8

F G A B C D E f  
 e i o u a e i o  
 u a e i o u a e

Lin - guam re - fre - nans tem - pe - ret ne li - tis

hor - ror in - so - net vi - sum fo - ven - do

con - te - gat ne va - ni - ta - tes hau - ri - at.

[193] Only in the last part did we abandon this system so that we could lead the melody back properly to its tetrardus. Since certain texts command a suitable vocal setting simply from their own vowels, there is no doubt that the vocal setting will be most suitable if, after practice in many such, you select from the numerous possibilities only the more effective and those that fit together better. If you then fill in gaps, space out the constricted places, draw together the overextended, and broaden the overcondensed, you will make a unified, [194] polished work. This, too, I wish you to know, that, in the manner of pure silver, all chant gains in color the more it is used, and whatever displeases at first, after being polished through use as by a file, is extolled; and, in accordance with the diversity of people and minds, what displeases one is cherished by another; and, anon, things that blend together delight this man,

whereas that one prefers variety; one seeks a homogeneity and blandness in keeping with his pleasure-loving mind; another, since he is serious-minded, is pleased by staid strains; while another, as if distracted, feeds on studied and [195] intricate contortions; and each proclaims that music as much the better sounding which suits the innate character of his own mind.

If you absorb all these things from our teachings with unremitting practice, you cannot remain ignorant. Certainly, such expositions must be employed as long as we know only a part, so that we may arrive at the fullness of knowledge. But since the brevity here aimed at demands that we not pursue these matters at length, although indeed there are many things worth garnering from them, let this suffice on setting words to music [*canendum*]. Now let us briefly examine the principles of diaphony.

### CHAPTER 18

*On diaphony, that is the principles of organum*

[196] Diaphony sounds as a separateness of [simultaneous] sounds, which we also call organum, [197] in which notes distinct from each other make dissonance harmoniously and harmonize in their dissonance. Some practice diaphony in such a way that the fourth step down always accompanies the singer, as A with D; and if you double this organum by acute a, so that you have A D a, then A will sound a diatessaron with D and a diapason with a, whereas D will sound a diatessaron and a diapente with A and a respectively, and acute a with the lower two notes a diapente [198] and a diapason. These three intervals blend in organum congenially and smoothly just as it has been shown above that they caused a resemblance of notes. Hence they are called "symphonies," that is, compatible unions of notes, although the term symphony is also applied to all chant. Here is an example of this diaphony [Ex. 9].

Example 9

Diapente

Diapason

Diatessaron

us

[201] You can both double the chant by an organal voice [*organum*] and the latter by its diapason as much as you like; for wherever there is the concord of the diapason, the aforementioned compatibility of the symphonies will not fail.

Since the doubling of notes has now been made sufficiently clear, let us explain the low voice added beneath the singer of the original line in the way that we employ. For the above manner of diaphony is hard [sounding] [*durus*], but ours is smooth [*mollis*]. In it we do not admit the semitone or the diapente, but we do allow the tone, the ditone, the semiditone, and the diatessaron; and of these the semiditone holds the lowest rank and the diatessaron [202] the chief one. With these four concords the diaphony accompanies the chant.

Of the tropes, some are serviceable, others more serviceable, and still others most serviceable. Those are serviceable that provide organum only at the diatessaron, with the notes a fourth from each other, like the deuterus on B and E; more serviceable are those that harmonize [*respondent*] not only with fourths but also with thirds and seconds,<sup>1</sup> by a tone and, though only rarely, a semiditone, like the protus on A and D. Most serviceable are those that make organum most frequently and more smoothly, namely, the tetrardus and tritus on C and F and G; for these harmonize at the distance of a tone, a ditone, and a diatessaron.

[203] The accompanying voice [*subsecutor*] should never descend below the tritus either when phrases end thereon or when the tritus is next below such an ending, unless the singer [*cantor* : singer of the original line] employs notes lower than that tritus. For the organal voice [*organum*] must never be taken below a tritus that is the lowest note [of the original voice] or that is situated next below this. But when [the original voice] employs notes lower than the tritus at a suitable place, the organal voice should also descend below it at the diatessaron; and as soon as that low region of the phrase is left so that [204] one does not expect it to recur, the accompanying voice should return to the place it previously had, so that it may remain on the final, if it has arrived there, or, if the final is above it, that the accompanying voice may proceed to it properly from nearby.

This convergence on the final [*occursus*] is preferably by a tone, less so by a ditone, and never by a semiditone. The occursus is scarcely made from a diatessaron, since a voice accompanying below [*succentus*] is more satisfactory in such a place; yet one should take care that this last does not happen at the final phrase-end of the piece.

[205] Often, however, when the singer [of the original line] employs notes below the tritus, we keep the organal voice fixed on the tritus. Then the main singer should not end a phrase on these lower notes, but, while the notes are

1. The usage "non solum quartis, sed tertiis et secundis" for fourths, thirds, and seconds is rare in this period.

When the cadential convergence [occursus] is made by a whole tone, there is a prolongation [*diutinus tenor*] of the final tone, so that it is accompanied partly from below and partly at the unison. In the case of a ditone this [prolongation] is still longer, so that often, when the accompanying voice is pitched, even though briefly, on the note in between [the ditone], [206] the occursus of a whole tone is not lacking. This is the close for the deuterus, because it takes place there harmoniously. If the cantus is not expected to descend beyond, to the tritus, it will then be useful for the organal voice to sound the protus [*proto vim organi occupare*], to accompany with the following [notes], and to converge properly on the ending via a whole tone.

Furthermore, the two voices must not be separated by more than a diatessaron; therefore, when the singer of the main part goes farther up, the accompanying part must ascend, as, for instance, C should accompany F; and D, G; and E, a; and so on.

Lastly, there is a diatessaron beneath each note except b-natural, so that in phrases where this appears, G will sound in the organal voice [*G vim organi possidebit*]. [207] When this happens, if the original chant either descends to F or ends a phrase on G, then F in the added voice accompanies G and a at suitable places; but if the original chant does not end on G, then F in the chant is not accompanied by F in the organal voice [*F cum cantu vim organi amittit*].

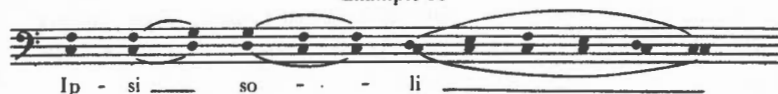
But when b-flat is used in the chant, F will be in the organal voice. Since therefore F and C [tritus] hold the chief place in diaphony to such a degree that they take precedence over the others as the most serviceable, we see that not undeservedly is the tritus beloved by Gregory more than the other notes. He assigns to it the beginnings of many melodies and most of [208] the repeated notes, so that often, if you take away the C's and F's of the tritus from his chant, it will seem that you have removed almost half of it.

The precepts of diaphony have now been given, and if you test them by the following examples, you will understand them perfectly.

### Testing this diaphony through examples

[209] We do not take the organal voice below the tritus if there is a close on it [here] or in the following notes. Here is a close on the tritus C:

### Example 10



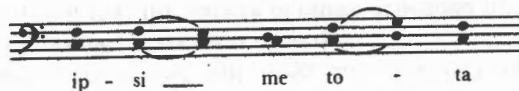
[210] Here is another phrase-ending on the tritus F, in which we accompany the chant at the diatessaron with the notes a fourth apart. At the end here an accompaniment a diatessaron below is more pleasing than an occursus.

Example 11



Here is another of the same mode:

Example 12



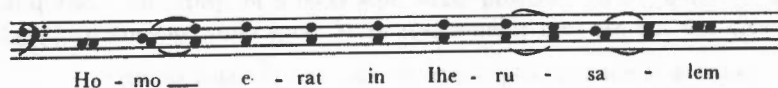
Here is another phrase in the protus D, in which an occursus of a tone appears at the end:

Example 13



[211] Here are [examples of the] phrase-ending on the deuterus E, showing an occursus of a ditone, either simple [Ex. 14] or with intervening notes [intermissae] [Ex. 15]:

Example 14

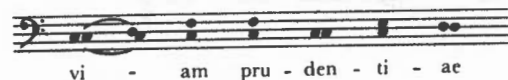
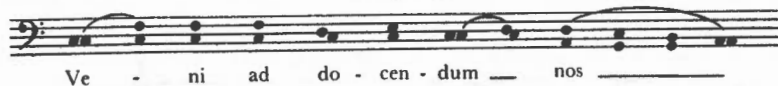


Example 15



Here is a phrase-ending on the protus A:

Example 16



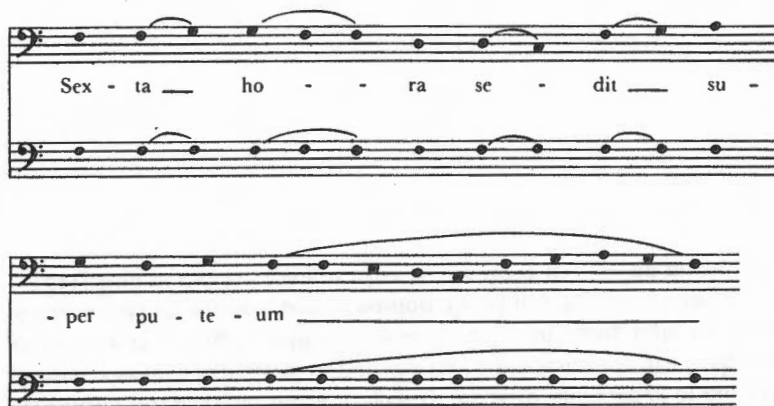
In this phrase-ending, notes below the tritus C, which [212] is next below the final D, are permitted, and after the low passage the earlier pitch [C] is resumed. Similarly in the following one, note how the organal voice rises, avoiding going below the main chant at the end of the final phrase.

Example 17



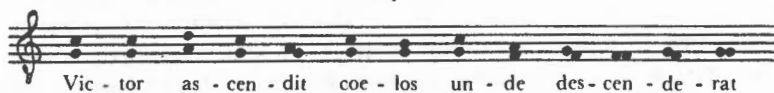
See how when the singer employs low notes we [may] keep the organal voice suspended on the tritus F:

Example 18



[213] See how toward the end F in the lower voice accompanies G and a in the chant:

Example 19



In the plagal tritus too you will find this practiced, so that b accompanies c and d, just as F accompanies G and a. Thus:

## Example 20



[214] Take pains, then, and turn the foregoing to use by practice; for if you have a melody [*symphonia*], these rules will suffice to give you diaphony.

At the outset we were silent about the origin of the science of music, since we realized that the reader was a novice. But now that he is trained and knows more, we impart it to him in conclusion.

## CHAPTER 20

*How the nature of music was discovered from the sound of hammers*

[228] In ancient times there were instruments that we are not clear about and also a multitude of singers who were, however, in the dark, for no man could by any train of thought reason out the differences between notes or a description of music. Nor could anyone ever [229] have learned anything certain about this science had not Divine Goodness of its own will at length arranged the following event.

When a certain great philosopher, Pythagoras, happened to be taking a walk, he came to a workshop in which five hammers were beating on one anvil. Amazed at their sweet concord, the philosopher drew near and, expecting at first that the basis of the variety of sound and its harmony [*modulatio*] lay in the differences of the hands of the workmen, he exchanged the hammers among them. But after this was done, its quality of sound [*vis*] followed each hammer. So he removed from the others one that was discordant and weighed the rest, and, in wondrous manner, by God's [230] will, they weighed the first with twelve, the second with nine, the third with eight, and the fourth with six, of I know not what units of weight.

Thus he learned that the science of music depended upon numerical ratios and comparisons; for there was precisely the interrelationship among the four hammers that there is among the four notes A, D, E, and a. For if A has twelve units and D nine, there being four groups of three divisions [on the monochord], A with its twelve units will have four groups of three; [231] and D with its nine, three groups of three. And thus you have the diatessaron. Further, since A has twelve units if E has eight, then A will have three fourfold steps, whereas E will have two, and the diapente appears. Also, if there are twelve units in A and six in the other a, the group of six is half that of twelve, just as acute a is obtained as the midpoint of the other A. Therefore the diapason is present. So from that same A to D gives the diatessaron, from A to E the diapente, and to the other a the diapason. Moreover, from D to E [232] sounds a tone, and



371 from D to A and a, a diatessaron and a diapente respectively. And from E to D also provides a tone, and E to A and a, a diapente and a diatessaron respectively; whereas acute a sounds a diapason with A, a diapente with D, and a diatessaron with E. All these things the careful investigator will find in the aforementioned numbers.

[233] Beginning at this point, Boethius, the expositor of this science, has set forth the extensive, marvelous, and very difficult concordance of this science with numerical ratios.

What more? The renowned Pythagoras first arranged the monochord, ordering the notes by means of the aforesaid intervals. Since this monochord constitutes not a trivial but a diligently revealed knowledge of our art, it has pleased wise men in general. Up to this day our science has gradually increased and grown in strength, with that same Teacher bringing light to the darkness of human affairs whose supreme wisdom flourishes through all the ages. Amen.

[234] End of the Micrologus, that is, the short treatise on music.